BOARD OF HEALTH

AS AMENDED BY CITY COUNCIL ON DECEMBER 11, 2013

REPORT 13-011
1:30 p.m.
Monday, December 2, 2013
Council Chambers
Hamilton City Hall

Present:	Mayor R. Bratina, Chair Councillors B. Clark, C. Collins, J. Farr, L. Ferguson, T. Jackson, B. Johnson, B. McHattie, S. Merulla, J. Partridge, R. Pasuta, M. Pearson, R. Powers, T. Whitehead
Absent with regrets:	Councillor S. Duvall – City Business Councillor B. Morelli – Police Business

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THE BOARD OF HEALTH PRESENTS REPORT 13-011 AND RESPECTFULLY RECOMMENDS:

1. *Retirement Homes Act, 2010* Implications Update (BOH13044) (City Wide) (Item 6.1)

That Report BOH13044 respecting the *Retirement Homes Act, 2010* Implications Update, be received.

2. Healthy Babies Healthy Children Budget (BOH13009(a)) (City Wide) (Item 6.2)

That Report BOH13009(a) respecting Healthy Babies Healthy Children Budget, be received.

3. Community Food Security Stakeholder Advisory Committee – Minutes – October 2, 2013 (Item 6.3)

That the minutes of the Community Food Security Stakeholder Advisory

Committee, dated October 2, 2013, be received.

4. Air Quality Task Force Action Plan (BOH13029) (City Wide) (Item 8.1)

(a) That the Medical Officer of Health, in partnership with Clean Air Hamilton be directed, pending identification of a funding source, to procure the development of an advanced airshed model for the City of Hamilton as described as "Recommendation 1" of the Air Quality Task Force Action Plan (Attached as Appendix "A" to Report 13-011);

(b) That Public Health Services staff, in partnership with Clean Air Hamilton be directed, pending identification of a funding source, to procure neighbourhood mobile monitoring surveys in identified neighbourhoods, as described in "Recommendation 2" of the Air Quality Task Force Action Plan (Attached as Appendix "A" to Report 13-011);

(c) That Public Health Services staff be directed to consult with Planning and Economic Development staff to develop air quality-related guidelines for new and redeveloping neighbourhood land use planning, as described in "Recommendation 3" of the Air Quality Task Force Action Plan (Attached as Appendix "A" to Report 13-011)

(d) That Clean Air Hamilton be directed to continue to coordinate education programming among community partners with regard to the promotion of green infrastructure to citizens, organizations and government, the Air Quality Outreach Program within Hamilton schools, and promotion of programs to encourage community-based environmental monitoring, as described in "Recommendations 4, 7 and 8" of the Air Quality Task Force Action Plan (Attached as Appendix "A" to Report 13-011);

(e) That Public Health Services staff be directed to work with the Ontario Ministry of the Environment and Clean Air Hamilton to develop and conduct particulate matter control workshops for local businesses and industries, as described in "Recommendation 10" of the Air Quality Task Force Action Plan (Attached as Appendix "A" to Board of Health Report 13-011).

FOR THE INFORMATION OF COUNCIL:

(a) CHANGES TO THE AGENDA (Item 1)

1. ADDED DELEGATION REQUESTS

(i) Mr. Shawn Comer respecting the development of a new approach to dealing with pests in rental units in Hamilton (Item 5.1)

The agenda was approved, as amended.

(b) DECLARATIONS OF INTEREST (Item 2)

Councillor Pearson declared a conflict of interest with respect to item 5.1 respecting Mr. Shawn Comer's delegation request respecting the development of a new approach to dealing with pests in rental units in Hamilton, as she is a rental property owner.

(c) CEREMONIAL ACTIVITY (Item 3)

(i) WALK Friendly Ontario Award (no copy) (Item 3.1)

Mayor Bratina welcomed Sharon Green, Public Health Nurse with the City and Steve Molly, Project Manager within the Public Works Department who were involved with the City's initiative in the WALK Friendly Ontario project, where the City recently received silver designation. The initiative looks to raise the profile of walking in community planning and design, and encourages municipalities to create and improve spaces and places to walk.

(d) MINUTES (Item 4)

(i) November 18, 2013 (Item 4.1)

The minutes from the November 18, 2013 Board of Health meeting were approved, as presented.

(e) DELEGATION REQUESTS (Item 5)

(i) Mr. Shawn Comer respecting the development of a new approach to dealing with pests in rental units in Hamilton (Item 5.1)

The delegation request by Mr. Shawn Comer respecting the development of a new approach to dealing with pests in rental units in Hamilton, was approved to be heard at the January 13, 2014 meeting of the Board of Health provided that the delegation presents new information.

(f) PRESENTATIONS (Item 8)

(i) Air Quality Task Force Action Plan (BOH13029) (City Wide) (Item 8.1)

Matt Lawson, Program Manager with Public Health Services gave a brief

presentation to the Board. A copy of the presentation was retained by the Clerk.
Mr. Lawson spoke about the background, and work preformed by the Air Quality Taskforce, since its inception. Mr. Lawson then proceeded to outline the recommendations that have been identified by the Air Quality Taskforce, for the consideration of the Board.

The Board asked questions of Mr. Lawson and staff with respect to the recommendations put forward.
The presentation respecting the Air Quality Task Force Action Plan, was received.

(a) Public Health Services staff were directed to work with Municipal Law Enforcement staff, with assistance from Legal Services to review the Town of Oakville's Particulate Matter Reduction By-law, and report back to the Board of Health on how it could be adapted for a similar by-law in Hamilton;

(b) Public Health Services staff, with support from Municipal Law Enforcement staff were directed to review the Streets By-Law (No. 86-077) and report back to the Board of Health on possible areas of improvement, as described in "Recommendation 9" of the Air Quality Task Force Action Plan;

(c) The Street Sweeping Program enhancement recommendation were referred to the 2014 budget deliberation, to address corresponding budget requirements for the service level increase to the Industrial Zone Neighbourhoods, as described in "Recommendation 10" of the Air Quality Task Force Action Plan;

Please note that Council approved recommendation (c) at the City Council meeting of September 11, 2013.

Please refer to item 4 for disposition of this matter.

(g) DISCUSSION ITEMS (Item 8)

(i) Prohibiting Smoking Within City Parks and Recreation Properties: Schedule Update (BOH07034(h)) (City Wide) (Tabled at the November 18, 2013 of the Board of Health) (Item 9.1)

The Board indicated to staff that consultation needed to take place with Councillor Duvall, before the item should be raised by the Board, for consideration.

(h) MOTIONS (Item 10)

(i) Strategies to Address Cancer (Item 10.1)

Whereas, the Hamilton Spectator did a week-long series on the differential impact of cancer on Hamiltonians, and;

Whereas, the City of Hamilton - Public Health Services has been active in poverty reduction efforts spurred on by the Hamilton Spectator's previous Code Red series.

That Public Health Services staff, Cancer Care Ontario and the Jurivinski Cancer Centre report back on actions that the City of Hamilton can take to deal with issues raised in the Hamilton Spectator's Cancer series.

The motion CARRIED on the following vote:

Yeas:	B. Clark, C. Collins, J. Farr, L. Ferguson, T. Jackson, B. Johnson, B. McHattie, S. Merulla, J. Partridge, R. Pasuta, M. Pearson, R. Powers, T. Whitehead
Total:	13
Nays:	R. Bratina
Total:	1
Absent:	B. Morelli, S. Duvall
Total:	2

(i) PRIVATE AND CONFIDENTIAL (Item 13)

(i) Performance Review - Public Health Services Management Team (no copy) (Item 13.1)

The Board of Health moved into Closed Session at 3:27 p.m. pursuant to Section 8.1(b) of the Procedural By-law and Section 239 of the Municipal Act to deal with personal matters about identifiable individuals, including City employees

The Board of Health reconvened in open session at 3:28 and indicated that they did not have sufficient time today to deal with item before them, and requested that the item appear on the next agenda

(j) ADJOURNMENT (Item 13)

There being no further business, the Board of Health adjourned at 3:30 p.m.

Respectfully submitted,

Mayor R. Bratina
Chair, Board of Health

Christopher Newman
Legislative Coordinator

ACTION PLAN

Report of the Air Quality Task Force (AQTF)

Hamilton Area Airshed

December 2013

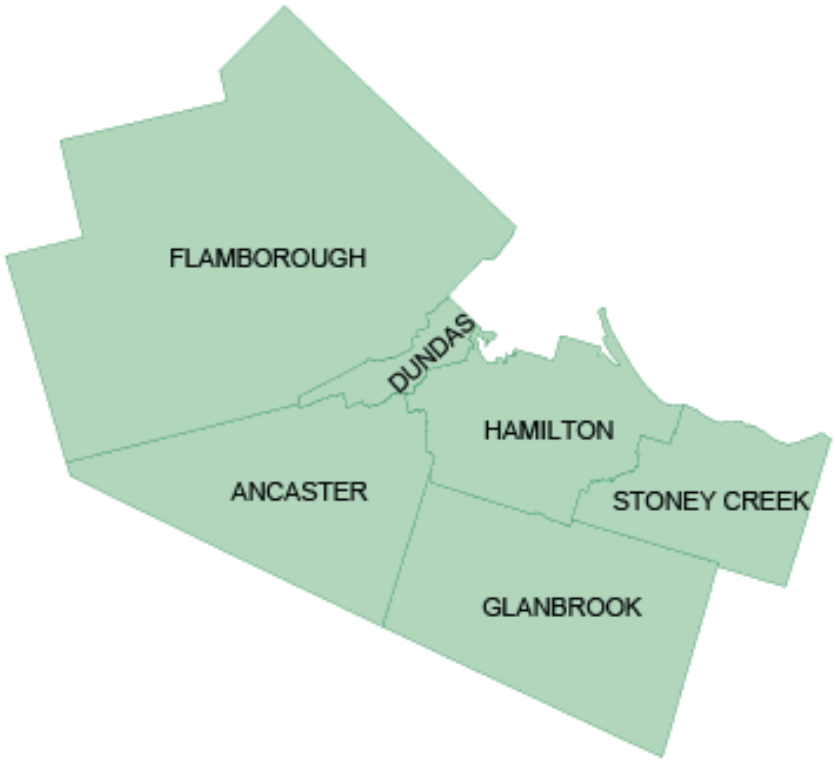


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Executive Summary

The Air Quality Task Force (AQTF) working group consisted of members from Clean Air Hamilton (CAH) who since 1998 have been working to improve air quality throughout the City of Hamilton. For well over a decade, CAH has provided City Council, City staff and the community with science-based information essential for better decision-making in the promotion and protection of air quality. The AQTF was established as a result of the motion passed on December 3rd, 2012 by the Hamilton Board of Health with the mandate to: “…*investigate and make recommendations to the City on actions that can be taken to reduce air pollution in Hamilton*.” This motion was brought forth as a result of local citizen concern about: “…residing in neighbourhoods in close proximity to Hamilton’s industrial core as they relate to air quality” (City of Hamilton Public Health Services BOH 12035, 2012).

Therefore, with their collective and extensive knowledge of air quality issues in the City of Hamilton, the AQTF developed a list of 10 recommendations: “*on actions that can be taken to reduce air pollution in Hamilton*” (Appendix A).

The AQTF believes an effective response going forward will include a suite of different actions intended to address the complicated interaction of Hamilton's unique geography, multiple sources of air pollution and the distribution of various land uses and transportation infrastructure within the City of Hamilton.

Further, many of the efforts to date have involved simple actions which have resulted in significant air quality improvements. However, further improvements in air quality may be dependent on more complex strategies required to address the complexity of Hamilton’s airshed.

Air quality in the City of Hamilton is influenced by pollution coming into the City from long-range trans-boundary sources, local emissions generated from energy use, industrial releases, emissions from transportation sources and by meteorological conditions and atmospheric processes (CAH, 2013). Therefore, it is important to stress that air pollution issues in the City of Hamilton are complex with multiple sources generated by different contributors impacting local air quality; accordingly measures to reduce air pollution must take into account this complexity.

The AQTF emphasizes the importance of providing City of Hamilton residents with the tools to inform individual actions to reduce personal exposures. In order to be able to provide the public with such information, the AQTF recognizes the important role of air quality modeling as a tool designed to provide the information required to guide individual choices.

There have been numerous studies from all over the world confirming the adverse effects of air pollution on the health of a population (Kunzli and Perez, 2009). Short spikes or peaks in air pollution have been linked to school and work absenteeism, asthma symptoms, hospital admissions and emergency department visits for heart and

lung conditions, and premature deaths. Furthermore, increases in heart and lung cancer and reduced life expectancy have been statistically linked to chronic $PM_{2.5}$ exposure (Pope et al., 2002).

In Ontario, it is estimated that short-term and long-term exposure to air pollution contributes to more than 5,800 premature deaths, 16,000 hospital admissions, 60,000 emergency room visits and at least 29 million minor illness days per year (Ontario Medical Association, 2005). In addition, long-term exposure to $PM_{2.5}$ is estimated to contribute to approximately 9,500 premature deaths across Canada (Canadian Medical Association, 2008).

In Hamilton, it is estimated that air pollution contributes to approximately 186 premature deaths, 395 respiratory hospital admissions and 322 cardiovascular hospital admissions each year (SENES, 2012).

Clean Air Hamilton (2013) reports that despite long-term reductions over recent decades, the annual values for pollutants known to be hazardous to human health - PM_{10}, $PM_{2.5}$, SO_2, benzene and benzo[a]pyrene - have all shown modest increases over the past three to four years. Moreover, in Hamilton, mobile air monitoring studies report that higher pollutant exposures were measured along arterial roads, major highways and intersections due to emissions from automobiles, light-duty and heavy-duty trucks (CAH, 2013). Therefore, monitoring has been instrumental in providing helpful information on key air pollutant types and sources in the City of Hamilton.

This report presents and describes components of an action plan that looks to the individual, community, and all levels of government to take steps toward a comprehensive approach to air pollution reduction in the City of Hamilton.

Background

On December 3rd, 2012, the Hamilton Board of Health passed a motion that received and approved the following recommendation: “*That Clean Air Hamilton establishes a working group to investigate and make recommendations to the City on actions that can be taken to reduce air pollution in Hamilton.*” Members of Clean Air Hamilton (CAH) were informed of the motion passed by the Board of Health, mandating that CAH form a task force to investigate and bring forward recommendations on actions that can be taken to reduce air pollution in Hamilton.

Air Quality Task Force (AQTF)

Participation on this task force was open to interested members of Clean Air Hamilton. The task force Chairperson, a member of Clean Air Hamilton ,led the group toward satisfying the mandate from the Board of Health. The Air Quality Task Force (AQTF) met on a monthly basis in 2013.

The AQTF consulted with stakeholders in order to develop its recommendations to the Board of Health about what actions should be taken to improve air quality.

The AQTF developed this action plan which contains recommendations in the following areas:

i. Air monitoring and modelling;
ii. Planning;
iii. Education & outreach; and
iv. Municipal action

Vision

Through the collective involvement of citizens, community and government in the City of Hamilton (Figure 1), the AQTF supports: “*actions that can be taken to reduce air pollution in Hamilton”* and that have the potential to result in:

- Improved human health due to decreased exposure to air pollutants
- A sustainable environment which receives fewer and lower emissions and produces less detriment to the local airshed
- A higher quality of life for individuals who live and/or work in the City of Hamilton
- A legacy for future generations that includes a cleaner environment

Airshed Management System

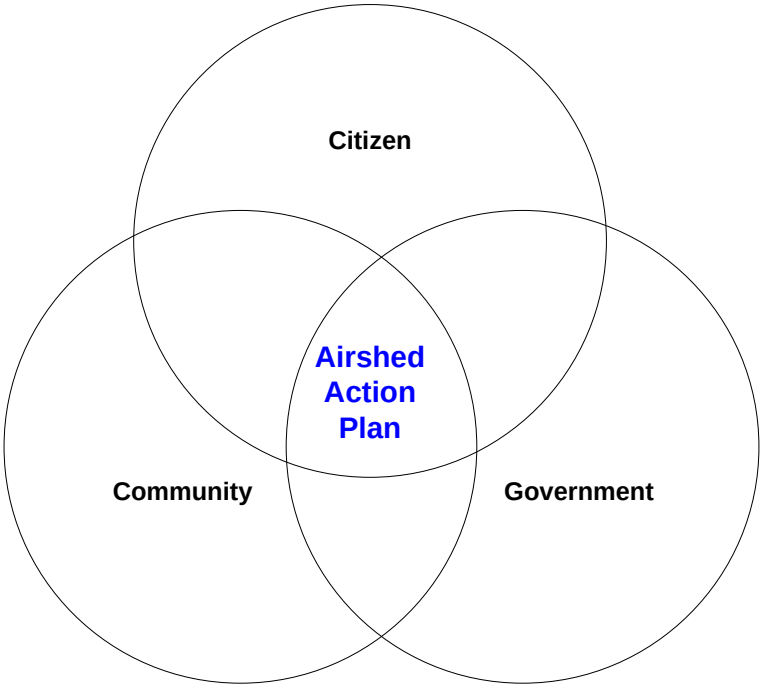
An airshed has been described as: “a defined physical geographical area which is covered by a volume of air that has similar characteristics and into which air pollutants are deposited and often remain for a period of time” (Balsillie, 2010). It is important to note that the area may be made up of many jurisdictions since emissions from one jurisdiction have the potential to impact air quality in other jurisdictions.

It is recognized that multiple emission sources, including those from the transportation, industrial and residential sectors, all contribute to air pollution concerns and will only increase with population growth. In order to address these multiple emission sources, an integrated approach with multi-stakeholder participation is essential.

Stakeholder engagement and involvement with respect to control actions taken in response to evidence-based results, air monitoring and modeling, education and outreach, as well as planning are all critical to improving air quality in the City of Hamilton.

The AQTF brings forward 10 recommendations “*on actions that can be taken to reduce air pollution in Hamilton*” (Appendix A). The 10 recommendations have been organized from one to ten with each recommendation building on the previous one thereby creating an integrated and comprehensive approach to air pollution reduction for the City of Hamilton to apply. Therefore, ordering of recommendations has been done in a systematic manner rather than one of priority.

Figure 1. Collaborative partnership to reduce air pollution in Hamilton



Components of the Action Plan

i) Air Modelling and Monitoring

There are now advanced air quality models available that can be used to determine the contribution of air pollution to the geographical distribution of ambient air concentrations that residents are exposed to right down to a neighbourhood level. Emissions from multiple sources including transportation, industry, agriculture/biogenic emissions, community and residential and long-range sources (i.e. transboundary) can be accounted for in these air quality models. Moreover, existing inventories and data including those from the US EPA, Environment Canada, Ministry of Environment, the Hamilton Air Monitoring

Network (HAMN) and Ministry of Transportation will be incorporated into the air quality modelling system.

Air quality modelling is an essential tool since it not only explains current air quality conditions, it can also predict air quality using forecast conditions. Air quality models use data on emission sources and data on atmospheric processes and terrain characteristics to forecast ambient air quality and the contribution of different sectors to local air quality. Therefore, numerous potential future scenarios such as new policy implementation and/or proposed new sources of emissions can be estimated beforehand with the use of air quality modelling to inform effective mitigation strategies. With the use of advanced air quality modelling, the City of Hamilton could gain a better understanding of the contribution of emissions from different sectors and would be able to predict potential impacts of policies pertaining to new development, land use and transportation on air quality. Members of the Hamilton Industrial Environmental Association (HIEA) have already expressed readiness to invest in an advanced airshed model. The great value of advanced airshed modelling has already been recognized by neighbouring municipalities such as Halton and Peel Region, which have put such systems in place. Therefore, the AQTF brings forward:

RECOMMENDATION 1

Commit to partnerships with interested stakeholders to fund the development of an advanced air model for the City of Hamilton.

Because air modelling is dependent on air monitoring data, the AQTF brings forward:

RECOMMENDATION 2

Strengthen air monitoring activities through additional:

a. Neighbourhood mobile monitoring surveys;
b. Number and location of air monitors;
c. Monitoring strategies and technologies.

ii) Planning

Land-use planning is critical for managing air quality levels in the City of Hamilton. By considering land-use planning early on in the process, future localized air quality issues impacting sensitive land uses can be avoided or

minimized. The importance of this early involvement in land-use planning has been recognized and outlined by Halton Region in two draft reports.

The first includes the Draft Air Quality Assessment Guidelines (Appendix B) which provide a framework for the municipal decision-making practice pertaining to sensitive land uses and residential, industrial, transportation and utility development applications in order to uncover the potential for harmful impacts to air quality.

The second includes the Draft Land Use Compatibility Guidelines (Appendix C) which are set out to protect and improve the health and quality of life of people within the area by endorsing the implementation of Regional Official Plan Amendment 38 (ROPA 38) policies on land use compatibility. This policy aims to minimize the negative impacts of air pollution from industrial, transportation and utility sources on sensitive land uses. Therefore, guidance is offered to developers with respect to land use compatibility issues via the planning and development approval process such that appropriate development is advanced and factors such as intensification, mixed use communities, and transit supportive urban form are taken into consideration.

Therefore, the AQTF brings forward:

RECOMMENDATION 3

Develop appropriate air quality related guidelines for new and redeveloping neighbourhood land use planning. These guidelines should consider the potential impacts of personal transportation, arterial roads, 400 series highways and site specific and technical standards for industrial emissions.

In addition, the US EPA (2013) reports that vegetation can reduce ground level ozone by reducing air temperatures, reducing power plant emissions associated with air conditioning, and removing air pollutants. It is noted that green infrastructure features can reduce particulate matter by absorbing and filtering it. Moreover, a study on the benefits of green infrastructure conducted in the City of Philadelphia has found green infrastructure has the potential to reduce ozone and particulate pollution levels significantly enough to reduce mortality, hospital

admissions, and work loss days (Stratus Consulting Inc., 2009). Not only do green roofs reduce air pollution but they also reduce urban heat-island impact, control storm water runoff and lower energy consumption (City of Hamilton, 2011). The City of Toronto has recognized the importance of green roofs and and street shading by implementing supportive bylaws. Therefore, the AQTF brings forward:

RECOMMENDATION 4

Promote green infrastructure (i.e. green roofs, street shading) to be supported by citizens, organizations and government.

iii) Education & Outreach

Air quality data must be shared with key stakeholders, including community members and government, effectively such that knowledge and awareness of air quality conditions in the City of Hamilton can be increased and collective air pollution reduction and risk management strategies can be undertaken. Paying careful attention to the manner in which environmental health information is presented will allow citizens to incorporate important information into their health decision-making processes (Peters, Hibbard, Slovic, Dieckmann, 2007). Therefore, the AQTF brings forward:

RECOMMENDATION 5

Provide individuals with tools to minimize their personal exposure. These tools should include a real-time map of air quality conditions in the City of Hamilton to encourage alternative modes of transportation such that citizens have the opportunity to select pedestrian and cycling routes which would minimize their personal exposure to air pollution.

Since previous engagement with local business operators about fugitive dusts and environmental impacts has fostered air pollution reduction measures (CAH, 2010), the AQTF brings forward:

RECOMMENDATION 6

Develop and conduct particulate matter control workshops in partnership with the Ontario Ministry of the Environment for local businesses and industries.

Because health decision-making processes in adulthood are shaped by early life course experiences (Umberson, Crosnoe, Reczek, 2010), the AQTF brings forward:

RECOMMENDATION 7

Expand the Air Quality Outreach Program within Hamilton schools such that air quality curriculum (ie., benefits of anti-idling, active transportation commuting routes, etc.) is promoted.

In view of the fact that community-based environmental monitoring empowers community members with respect to influencing air quality and striving for change (Ottinger, 2010), the AQTF brings forward:

RECOMMENDATION 8

Promote programs that encourage community-based environmental monitoring and engagement within the City of Hamilton.

iv) Municipal Actions

As noted earlier in the report, $PM_{2.5}$ levels have shown modest increases over the past three to four years in Hamilton (CAH, 2013). Research has found that fine particulate matter is harmful to human health (Pope et al., 2002). This increase in $PM_{2.5}$ suggests that further opportunities for improvement are needed. Recognizing that $PM_{2.5}$ comes from many different sources, the AQTF brings forward:

RECOMMENDATION 9

Support the revision, updating and enforcement of existing bylaws to minimize the generation and dispersion of airborne particulate matter.

Given that street washing has been identified as an effective strategy to mitigate curb side particulate matter (Amato et. al., 2009). The AQTF brings forward:

RECOMMEDATION 10

Implement strategies to improve street cleaning by taking into account factors such as cleaning schedules and equipment effectiveness.

Conclusion

Although there has been a downward trend in pollutant levels since the mid-1990s, recent (3-4 year) increases in PM_{10}, $PM_{2.5}$, SO_2, benzene and benzo[a]pyrene are of concern and require direct attention. The AQTF was mandated to investigate and bring forward recommendations on actions that can be taken to reduce air pollution in Hamilton. Since multiple emission sources including those from the transportation, industrial and residential sectors contribute to air pollution in Hamilton, an integrated approach with citizens, community and government is essential. After consulting with stakeholders, the AQTF has brought forward 10 recommendations in this action plan to reduce air pollution in Hamilton. These 10 recommendations - built upon air monitoring and modelling, planning, education and outreach, green infrastructure and municipal action - are expected to work synergistically to achieve air pollution reductions in the City of Hamilton. Careful consideration of each recommendation in ascending order is necessary to understand the benefits of an integrated and comprehensive action plan to address air pollution in the City of Hamilton.

Appendix A
AQTF Recommendations

Component	Recommendation #	Description	Preliminary Cost Estimates ($)	Timeframe
Air Monitoring and Modelling	1	Commit to partnerships with interested stakeholders to fund the development of an advanced air model for the City of Hamilton.	250 000/3	over 2 year period
	2	Strengthen air monitoring activities through additional: a. neighbourhood mobile monitoring surveys; b. number and location of air monitors; c. monitoring stations and technologies.	100 000	1 year
Planning	3	Develop appropriate air quality related guidelines for new and redeveloping neighbourhood land use planning. These guidelines should consider the potential impacts of personal transportation, arterial roads, 400 series highways and site specific and technical standards for industrial emissions.	50 000	1 year
	4	Promote green infrastructure (i.e. green roofs, street shading) to be supported by citizens, organizations and government.		
Education & Outreach	5	Provide individuals with tools to minimize their personal exposure. These tools should include a real-time map of air quality conditions in the City of Hamilton to encourage alternative modes of transportation such that citizens have the opportunity to select pedestrian and cycling routes which would minimize their personal exposure to air pollution.	10 000 15 000	1st year every year after
	6	Develop and conduct particulate matter control workshops in partnership with the Ontario Ministry of the Environment for local businesses and industries.	8 000	
	7	Expand the Air Quality Outreach Program within Hamilton schools such that air quality curriculum (i.e. benefits of anti-idling, active transportation commuting routes) is promoted.	12 000	
	8	Promote programs that encourage community-based environmental monitoring and engagement within the City of Hamilton.	20 000	
Municipal Action	9	Support the revision, updating and enforcement of existing bylaws to minimize the generation and dispersion of airborne particulate matter.		
	10	Implement strategies to improve street cleaning by taking into account factors such as cleaning schedules and equipment effectiveness.	20 000 - 66000	1 year

TOTAL		

Appendix B Draft Air Quality Assessment Guidelines

Retrieved from:
www.halton.ca/common/pages/UserFile.aspx?fileId=94341

Appendix C Draft Land Use Compatibility Guidelines

Retrieved from:
http://www.halton.ca/common/pages/UserFile.aspx?fileId=94338

References

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